

CSCI 2020 Database Fundamentals

Database Design Exercise

Using the specification below create a set of tables to hold all the necessary information. Indicate Primary and Foreign Keys, and add a few rows of sample data to each table.

The UFP Database

Starfleet is a branch of the United Federation of Planets, a representative government much like our own. You are to set up a database to track the representatives to the UFP Council. A delegate represents a certain planet in the Council. A Planet may have between 1 and 5 delegates to the council, each of whom serves a term of 2, 4 or 6 years (they may be reappointed for further terms). Each planet is of course identified by its name, and is located in one of the 20 sectors of the Galaxy. In certain funding issues, it is also necessary to know the level of civilization present on each planet. We also want to track the languages spoken on each planet so that planning can be done for the hiring of translators. Currently, there are 400 planets in the UFP and they represent almost 875 languages.

Each delegate, of course, has a name and is given a unique identifier for use in their official activities. We also want to track the number of years each delegate has been a member of the council so seniority issues can be decided. Each delegate is, of course, assigned an office, but that office may be shared among several delegates. Recent renovations on some office buildings have led to a significant number of un-occupiable offices and a lot of doubling up among the junior delegates. For this reason, we need to track the area of each office so equitable use of space can be assured. In addition, the office ID number and office can also be identified by its location code. This is made up of a building code, wing number and room code.

The Council functions primarily through its committees (each of which may have several sub committees, sub-sub committees, sub-sub-sub committees, and so on). Luckily, sub committees always report to exactly one supervising committee. Each committee is identified by its name, and is either a permanent, ad-hoc or special committee depending on how it was created. A committee always has a single delegate designated as its chair, and will have at least 8 members (maybe many more). Each delegate always sits on at least 4 committees, but again that number may be much larger.

Planet:	Languages:	Delegate:	Office:
name PK	language PK	delegate_for FK-Planet	id PK
sector	planet_name FK-Planet	delegate_since	building-code
level_of_civilization		id PK	wing-number
		name	room-code
		office_id FK-Office	
Committee:	Members:	Sectors:	
name PK	committee FK-Committee	id PK	
type	delegate FK-Delegate	sector	
chair FK-Delegate			
reports_to			